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EXAMINER	
TSUI, WILSON W	

ART UNIT	PAPER NUMBER
2178	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/537,501	HEUER ET AL.	
	Examiner	Art Unit	
	WILSON TSUI	2178	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *23 July 2009*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *17-36* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *17-36* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. This final action is in response to the amendment filed on: 07/23/09.

2. Claim 22 is amended. Claims 31-36 are new. Claims 1-16 are cancelled. Claims 17-36 are pending.

3. With regards to claims 17, 23, 29, and 30; the 35 USC 112 first rejections are withdrawn, as necessitated by applicant's explanation of how the subject matter is enabled as evident within the specification.

4. Claims 17-30 remain rejected, and claims 31-36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wan, further view of Hunter.

Priority

5. Acknowledgment is made of applicant's claim for foreign priority under 35 U.S.C. 119(a)-(d) with respect to PCT/EP03/13511 filed on 01/12/2003, foreign priority based on application filed in Germany on 12/03/2002, and foreign priority based on application filed in Germany on 08/29/2003.

Claim Objections

6. Claims 32-36 are objected to because of the following informalities:

Claims 32-36 duplicate the dependent claims 18-22. It appears that claim 32 should depend upon claim 18, claim 33 should depend upon claim 31, claim 34 should depend upon claim 33, claim 35 should depend upon claim 33, and claim 36 should depend upon claim 35.

Appropriate correction is required.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7. Claims 17-30 remain rejected, and claims 31-36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wan (US Application: US 2004/0028049 A1, published: Feb. 12, 2004, filed: Oct. 5, 2001), further view of Hunter ("An Overview of the MPEG-7 Description Definition Language (DDL)", published: June, 2001, pages 765-772).

With regards to claim 17, Wan teaches a method for encoding an XML-based document including contents according to an XML schema language definition (paragraph 0021), said method comprising the steps of:

- *Generating a coded binary representation of the document* (whereas, a binary representation of the document is implemented through encoding) *by assigning binary structure codes to the contents of the document via code tables* (paragraphs 0011, 0017, 0044: whereas, a structure stream is encoded with code tables.)

- Wherein the coding comprises encoding special data types of the document (paragraphs 0055-0058: whereas, when implementing the coded binary representation, special datatypes can be flexibly identified), and *a parent node has a binary structure code, and in a first hierarchical plane below said parent node a plurality of element nodes having binary structure codes* (Fig 6A, paragraph 0104).

However, Wan does not expressly teach *wherein* the datatype is *an element of a complex data type with a mixed content model, and wherein within said complex data type in the first hierarchical plane, textual content is an element*.

Hunter teaches *wherein* the datatype is *an element of a complex data type with a mixed content model,* comprises a parent node and in a first hierarchical plane below said parent node a plurality of element nodes, *and wherein within said complex data type in the first hierarchical plane, textual content is an element* (pages 767, 768, S768: whereas, datatypes include complex type data with a mixed content model. The parent node such as 'OrganizationType' is at a first node/top-most node/element (top hierarchical plane) in a hierarchical XML tree, the element nodes (such as OrgName, or ContactPerson) are nested below the 'OrganizationType'. Also as explained in 768, a complexType datatype can be declared as *mixed* content (In other words, the 'OrganizationType' can be declared as mixed content, or as explained in 768, 'Introduction' is declared as a complex type with mixed content. As also shown in 768, 'Introduction' is a parent node, and there can be elements below the parent node, such as 'Name'). The mixed content character data appears between elements and their

children, as shown in the valid instance example (page 768) of a mixed content model, the 'Dear Ms.' String is textual content as an element, and the 'Name' structured element is also a textual content element).

It would have been obvious to one of the ordinary skill in the art at the time of the invention to have modified Wan's binary encoding of datatypes (and special datatypes) within a hierarchical structure; to have further included the complex datatype, as one of the special datatypes for describing an MPEG stream, as taught by Hunter. The combination of Wan and Hunter would have allowed Wan to have "allowed children elements in their (complex types) content and carry attributes" (page 767, S767: Hunter) to help define internal schema components which can be used in other schema components (Hunter: page 767).

With regards to claim 18, which depends on claim 17, Wan and Hunter teach *wherein the assignment of the structure codes to the textual contents of a complex type data type with mixed content model*, as similarly explained in the rejection for claim 17, and is rejected under similar rationale. Furthermore, Wan teaches the assignment of structure codes *is effected exclusively via OperandTBC coding tables* (page 13: whereas, an ID code table is used to store hierarchical/tree data for a set of nodes).

With regards to claim 19, which depends on claim 17, Wan and Hunter teach *wherein the textual contents of a complex type data type with the mixed content model*, as similarly explained in the rejection for claim 17, and is rejected under the same

rationale. Additionally, Wan teaches the textual contents are further *assigned position codes* (paragraph 0109: whereas node locators are used for assigning position codes).

With regards to claim 20, which depends on claim 19, Wan teaches *wherein single element position codes and/or multiple element position codes are used in the assignment of the position codes* (paragraph 0102, 0109: whereas, one or more node locators are used for assigning position codes).

With regards to claim 21, which depends on claim 19, Wan teaches *wherein the position codes are encoded using codes of variable length* (paragraph 0104: whereas each node/node-locator includes a variable size field).

With regards to claim 22, which depends on claim 21, Wan teaches *wherein the position codes are encoded using a code vluimsbf5* (page 11: whereas, as declared in the 'size_in_byte' field of a bit stream, a variable length unsigned integer, and most significant bit(s)-first, format is used as part of the encoding process).

With regards to claim 23, Wan teaches *a method for decoding a binary representation of an XML-based document* (paragraph 0075), comprising: *Receiving a coded binary representation of the document by assigning binary structure codes to the contents of the document via code tables*: (paragraphs 0011, 0017, 0044: whereas, a structure stream is encoded and then decoded with code tables)*;*

Assigning structure codes to textual content of the element datatype (paragraphs 0049, 0050, 0054: whereas structure codes are assigned to data types. Additionally, structure codes are assigned to textual content as shown in Fig. 7).

Converting the assigned structure codes into the textual contents of the XML-based document that were assigned to the structure codes (paragraph 0075: whereas, a decoder implements the conversion process).

Encoding the textual contents of special data types of the document (paragraphs 0055-0058: whereas, when implementing the coded binary representation, special datatypes can be flexibly identified), and *a parent node has a binary structure code, and in a first hierarchical plane below said parent node a plurality of element nodes having binary structure codes* (Fig 6A, paragraph 0104).

However, Wan does not expressly teach *wherein* the datatype is *an element of a complex data type with a mixed content model, and wherein within said complex data type in the first hierarchical plane, the textual content is an element*. Hunter teaches *wherein* the datatype is *an element of a complex data type with a mixed content model,* comprises a parent node and in a first hierarchical plane below said parent node a plurality of element nodes, *and wherein within said complex data type in the first hierarchical plane, the textual content is as an element* (pages 767, 768, S768: whereas, datatypes include complex type data with a mixed content model. The parent node such as 'OrganizationType' is at a first node/top-most node/element (top hierarchical plane) in a hierarchical XML tree, the element nodes (such as OrgName, or

ContactPerson) are nested below the 'OrganizationType'. Also as explained in 768, a complexType datatype can be declared as *mixed* content (In other words, the 'OrganizationType' can be declared as mixed content, or as explained in 768, 'Introduction' is declared as a complex type with mixed content. As also shown in 768, 'Introduction' is a parent node, and there can be elements below the parent node, such as 'Name'). The mixed content character data appears between elements and their children, as shown in the valid instance example (page 768) of a mixed content model, the 'Dear Ms.' String is textual content as an element, and the 'Name' structured element is also a textual content element).

It would have been obvious to one of the ordinary skill in the art at the time of the invention to have modified Wan's binary encoding of datatypes (and special datatypes) within a hierarchical structure; to have further included the complex datatype as one of the special datatypes for describing an MPEG stream, as taught by Hunter. The combination of Wan and Hunter would have allowed Wan to have "allowed children elements in their (complex types) content and may carry attributes" (page 767, S767: Hunter) to help define internal schema components which can be used in other schema components (Hunter: page 767).

With regards to claim 24, which depends on claim 23, Wan teaches *wherein the assignment is effected by means of structure codes (SBC) via OperandTBC coding tables* (page 13: whereas, an ID code table is used to store hierarchical/tree data for a

set of nodes), and also paragraph 0075, whereas a complementary decoder process is implemented.

With regards to claim 25, which depends on claim 23, Wan and Hunter teaches *wherein binary representations of textual contents of a "complex type" data type with the "mixed" content model*, as similarly explained in the rejection for claim 23, and is rejected under similar rationale. Additionally Wan teaches *addressed by means of "position codes" are further converted into textual contents at the assigned position* (paragraphs 0109-0112: whereas, reconstruction/decoding takes place by converting into textual contents at the assigned position).

With regards to claim 26, which depends on claim 25, Wan teaches wherein *the "position codes" comprise "single element position codes" (SPC) and/or "multiple element position codes" (MPC)* (paragraphs 0102, 0109 : whereas, one or more node locators are used for position codes).

With regards to claim 27, which depends on claim 25, Wan teaches wherein the *"position codes" are encoded using codes of variable length* (paragraph 0104: whereas each node/node-locator includes a variable size field)

With regards to claim 28, which depends on claim 27, Wan teaches *wherein the "position codes" are encoded using a code vluimsbf5* (page 11: whereas, as declared in

the 'size_in_byte' field of a bit stream, a variable length unsigned integer, and most significant bit(s)-first, format is used as part of the encoding process).

With regards to claim 29, for a device performing a method similar to the method of claim 17, is rejected under similar rationale.

With regards to claim 30, for a device performing a method similar to the method of claim 23, is rejected under similar rationale.

With regards to claim 31, Wan teaches *a method for encoding an XML-based document including contents according to an XML schema language definition* (paragraph 0021)*, said method comprising the steps of:*

Generating a coded binary representation of the document using a tree structure by (whereas, a binary representation of the document is implemented through encoding) *assigning binary structure codes to nodes via code tables* (paragraphs 0011, 0017, 0044: whereas, a structure stream is encoded with code tables)*,* Wherein the coding comprises encoding special data types of *the document* (paragraphs 0055-0058: whereas, when implementing the coded binary representation, special data types can be flexibly identified), and *a parent node having a binary structure code and in a first hierarchical plane below said parent node a plurality of nodes having binary structure codes* (Fig 6A, paragraph 0104); and *other elements are assigned within said first*

hierarchical plane wherein the content of said other elements are assigned to a lower hierarchical plane (whereas, as shown in Fig 1, the structured element node <TR>'-1 is shown to have other structural elements assigned in a lower hierarchical plane, such as '<TD>'-1.1, and '<TD>'-1.2).

However, Wan does not expressly teach *wherein* the datatype is *a complex data type with a mixed content model, and wherein within said complex data type* in the first hierarchical plane *textual content is encoded as a node having associated binary structure code.*

Yet, Hunter teaches *wherein* the datatype is *a complex data type with a mixed content model, and wherein within said complex data type* in the first hierarchical plane *textual content is encoded as a node* (pages 767, 768, S768: whereas, datatypes include complex type data with a mixed content model. The parent node such as 'OrganizationType' is at a first node/top-most node/element (top hierarchical plane) in a hierarchical XML tree, the element nodes (such as OrgName, or ContactPerson) are nested below the 'OrganizationType'. Also as explained in 768, a complexType datatype can be declared as *mixed* content (In other words, the 'OrganizationType' can be declared as mixed content, or as explained in 768, 'Introduction' is declared as a complex type with mixed content. As also shown in 768, 'Introduction' is a parent node, and there can be elements below the parent node, such as 'Name'). The mixed content character data appears between elements and their children, as shown in the valid

instance example (page 768) of a mixed content model, the 'Dear Ms.' String is textual content as an element, and the 'Name' structured element is also a textual content element).

It would have been obvious to one of the ordinary skill in the art at the time of the invention to have modified Wan's method for encoding structural node data with associated binary structure code, such that the structural text content of the mixed content model is also implemented as a structural element as well, as taught by Hunter. The combination of Wan and Hunter would have allowed Wan to have "allowed children elements in their (complex types) content and carry attributes" (page 767, S767: Hunter) to help define internal schema components which can be used in other schema components (Hunter: page 767).

With regards to claim 32, which depends on claim 31, for performing a method similar to the method of claim 18, is rejected under similar rationale.

With regards to claim 33, which depends on claim 31, for performing a method similar to the method of claim 19, is rejected under similar rationale.

With regards to claim 34, which depends on claim 33, for performing a method similar to the method of claim 20, is rejected under similar rationale.

With regards to claim 35, which depends on claim 33, for performing a method similar to the method of claim 21, is rejected under similar rationale.

With regards to claim 36, which depends on claim 35, for performing a method similar to the method of claim 22, is rejected under similar rationale.

Response to Arguments

8. Applicant's arguments filed 07/23/09 have been fully considered but they are not persuasive.

9. With regards to the independent claims, the applicant argues in page 8 of applicant remarks that "contrary to the prior art which stores textual content by assigning it to a respective node and storing the actual textual content in a lower hierarchical plane, the present invention treats textual content as a node". However, the examiner respectfully points out that the applicant is requiring the encoding of textual content from the *instance of the document* to be a node. Yet, the claim language only requires that textual content be encoded as an element, but does not require the extent of the textual content, as being the textual content from the *instance of the document* nor does the claim language require the content encoded as an element be a *structural element*. Thus, since as explained in the explanation above, Wan teaches that the schema/structure of the document *from the schema* is encoded, the *structural elements in textual content form* are used for encoding (Fig 1 of Wan: whereas <TD> is text from a schema, which is encoded as an element). To best expedite this application, the

examiner suggests the applicant clarify the claim language to explain that the textual content being encoded is *the textual content from the instance of the document*, and also that the *textual content* from the instance of the document is from *the text appearing between elements and their children* (i.e., non-structural text within the instance of the document) is stored *within a structural node*. Should the applicant have any questions regarding this suggestion, the Examiner respectfully invites the applicant to call for an interview.

10. The applicant further argues in page 9 of applicant remarks that “Wan does not disclose any type of mixed content model”. However, the examiner respectfully points out that Wan supports encoding structural data type elements, and furthermore, Wan is used in combination with Hunter (Hunter teaches that the structural data type elements include the mixed content model), as explained in the rejections above.

11. The applicant argues in page 9 of applicant remarks that “the nodes TD cannot be interpreted as such models because they only contain a single element". However, this argument is not persuasive, since Fig 1, is just an example, and the depth, as well as breadth of an XML document's tree structure is *not limited to a fixed schema/hierarchical-structure*, as explained in paragraph 0050 of Wan (whereas, various schema types having different structure and elements are supported).

12. The applicant argues in page 9 of applicant remarks that “contrary to examiner's assumption subnodes TD1.1, and TD 1.2 do not contain any textual content". However, this argument is not persuasive, and the examiner respectfully directs the applicant to the paragraphs immediately above, which further explain that the textual content

required in the claim language does not specify the scope/type of textual content, and that TD1.1, and TD 1.2 are textually defined and encoded in Wan's schema of Fig 1.

13. The applicant argues in page 9 of applicant remarks that “none of the cited references discloses to assign a binary structure code to a textual content" and that “Hunter merely discloses that in a mixed content model character data appears between elements and their children [and] however, Hunter does not disclose to assign a binary structure code to the character data”. However, this argument is not persuasive , since as similarly explained in the above rejection, Hunter teaches that a mixed content model is supported, and that a node within a mixed content model is treated as a structured element 'Name' in page 768 of Hunter. Hunter is further combined with Wan, as explained in the rejection above, and Wan assigns binary structure code to the textual/character data of structured elements defined within a schema (as shown in Fig.1) of Wan, and also further explained in the response to arguments above.

14. The applicant argues that the dependent claims are allowable, since their corresponding independent claims are allowable. However, this argument is not persuasive, since the independent claims have been shown/explained to be rejected.

Conclusion

15. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within

TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to WILSON TSUI whose telephone number is (571)272-7596. The examiner can normally be reached on Monday - Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Hong can be reached on (571) 272-4124. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/CESAR B PAULA/

Primary Examiner, Art Unit 2178

/Wilson Tsui/
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